UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,522	04/05/2001	John R. DePhillipo	E0543-00002	2835

8933 7590 06/03/2005

DUANE MORRIS, LLP
IP DEPARTMENT
ONE LIBERTY PLACE
PHILADELPHIA, PA 19103-7396

EXAMINER	
MYERS, CARLA J	
ART UNIT	**PAPER NUMBER**
1634	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/826,522	DEPHILLIPO ET AL.	
	Examiner	Art Unit	
	Carla Myers	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *105-109* is/are pending in the application.

4a) Of the above claim(s) *106-109* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *105* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/20/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The examiner reviewing your application at the PTO has changed. To aid in correlating papers in this application, all further correspondence regarding this application should be directed to examiner Carla Myers.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 9, 2004 has been entered.

Election/Restrictions

3. Applicant's election with traverse of methods for selecting a dose of an anti-oxidant by assaying for a polymorphism in each of a SOD gene and a catalase gene in the reply filed on March 3, 2005 is acknowledged. In the response, Applicants noted that they cannot respond to the restriction requirement imposed in the Office action of September 1, 2004 because no embodiment of the invention is encompassed by the restriction requirement. It is stated that the restriction required the election of a single polymorphism, whereas the present invention requires the analysis of at least two polymorphisms. However, the previous restriction requirement did not limit Applicants to the election of only a single polymorphism. Rather, the restriction requirement allowed for the election of a particular combination of polymorphisms (see pages 4 and 5 of the

Office action of September 1, 2004, i.e. "If applicant wishes to elect a method comprising assessing occurrence in the human's genome of disorder- associated polymorphisms, Applicant is required to elect a specific combination of polymorphisms").

Applicants state that the claims can all be examined together without undue hardship. However, undue burden would be required to examine the elected invention together with the additionally recited combinations of genes. It is noted that claim 1 is limited to methods which detect polymorphisms in a superoxide dismutase and catalase gene. This claim alone includes the analysis of any polymorphism in at least 3 distinct superoxide dismutase genes (SOD1, SOD2 and SOD3) and in 2 catalase genes (catalase and TYRP1 (catalase B)). It is also noted that claim 1 requires the analysis of any disease related polymorphism in these genes, and that each of these genes contain a multitude of known mutations (e.g., at least 100 SOD2 mutations have been identified). The dependent claims require the further analysis of polymorphisms in a third gene selected from 11 additional, distinct genes or classes of genes (claim 106), the further analysis of at least two additional genes from the 11 genes / classes or genes (claim 107), the further analysis of at least 4 additional genes from the 11 genes / classes or genes (claim 108), and the further analysis of at least 6 additional genes from the 11 genes / classes or genes (claim 109). If the group of 11 "third genes" consisted of single genes (which it does not; note, e.g., that there are at least 60 distinct human P450 genes, and a significantly large number of polymorphisms known to be present in these P450 genes), then the combination of possible third genes alone would be 55; the

combination of possible third and fourth genes would be 165, etc. The burden of searching and examining an additional 55 or 165 groups of genes, let alone the number of possible combinations of polymorphisms in these genes, is in fact undue. Each of the genes is structurally and functionally distinct from one another, having a different nucleotide sequence and encoding for a different protein having distinct biological and physiochemical properties. A search for each of the genes and their polymorphisms requires a different keyword and sequence search. For instance, a search for polymorphisms in a superoxide dismutase gene would not lead one to all references teaching polymorphisms in a glutathione peroxidase gene. Additionally, a finding that the detection of polymorphisms in one of the genes, e.g., superoxide dismutase, is anticipated or rendered obvious by the prior art would not necessarily extend to a finding that detection of a polymorphism in one of the "third genes", e.g., glutathione peroxidase, is also anticipated or rendered obvious by the prior art.

Applicants further state that it is their understanding that if the combination of superoxide dismutase and catalase polymorphisms is found to be allowable, then all of claims 105-109 will be considered allowable. This interpretation, however, is not correct. A finding that methods of selecting a dose of an anti-oxidant by assessing polymorphisms in superoxide dismutase and catalase genes are allowable would not necessarily lead to a finding that methods of selecting a dose of an anti-oxidant by assessing the occurrence of polymorphisms in the remaining 11 genes also meet all of the requirements for allowability of the claims (e.g., 112 first paragraph requirements).

Accordingly, Applicants have elected the combination of genes/classes of genes of superoxide dismutase and catalase (claim 105). While this combination of genes and polymorphisms goes beyond the groups set forth in the restriction requirement, claim 105 has been examined for its full scope. However, claims 106-109 are withdrawn from consideration as being drawn to a non-elected invention (i.e., as being drawn to patentably distinct combinations of genes).

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 105 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The following factors have been considered in formulating this rejection (*In re Wands,* 858F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988): the breadth of the claims, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability of the art, the amount of direction or guidance presented, the presence or absence of working examples of the invention and the quantity of experimentation necessary.

Breadth of the Claims:

Claim 105 is broadly drawn to a method for selecting a dose of an anti-oxidant composition for administration to a human wherein the method comprises assessing the occurrence of any disorder-associated polymorphism in any superoxide dismutase gene or catalase gene whereby the occurrence of each polymorphism indicates an increased dosage of the composition should be administered to the human. Thereby, the claims include detecting any polymorphism in at least SOD1, SOD2, SOD3, catalase and TYRP1 (catalase B) genes. The claims include the detection of any of a multitude of polymorphisms that are in some manner associated with any disease. While the claims do not specify the particular polymorphism (i.e., the nucleotide position and identity of the polymorphism), SOD and catalase genes are known to contain a multitude of polymorphisms, potentially associated with some disease. For instance, the SOD1 gene contains at least 42 distinct polymorphisms, SOD2 contains at least 135 polymorphisms, the SOD3 gene contains at least 63 polymorphisms, the CAT gene contains at least 136 polymorphisms, and the TYRP1 (catalase B) gene contains at least 65 polymorphisms (see BIOINFO gene card printouts from Weizmann Institute of Science).

Nature of the Invention

Claim 105 encompasses methods for determining the dosage of an antioxidant by detecting the presence of a nucleotide variation. The invention is in a class of inventions which the CAFC has characterized as 'the unpredictable arts such as

chemistry and biology" (Mycolgen Plant Sci., Inc. v. Monsanto Co., 243 F.3d 1316, 1330 (Federal Circuit 2001)).

Teachings in the Specification and State of the Art:

The specification outlines a method for determining the dose of an antioxidant to be given to a human patient that has polymorphisms in genes which encode for proteins associated with conversion of toxic oxygen to less toxic oxygen species, genes which encode for proteins which protect against oxidative stress, genes which encode for proteins that produce toxic oxygen species, genes which code for proteins that indirectly affect oxidative stress, and genes which encode for proteins which alter the level of expression of a protein associated with oxidative stress (see page 3). The specification states that the occurrence of any one polymorphism in any one of these gene types means that the individual will be more susceptible to oxidative damage as compared to an individual who does not have the polymorphism, and that the occurrence of a plurality of polymorphisms indicates an even higher susceptibility to oxidative damage. It is further stated (page 5) that a dosage of an antioxidant can be selected based on an assessment of disorder-associated polymorphisms. At page 6, the specification teaches that the polymorphisms may be assessed by determining the number of polymorphisms presented. Alternatively, weighing factors can be assigned to each polymorphism and the sum of the weighing factors is determined to yield a value that represents the relative susceptibility damage. Additionally, the specification (pages 12-13) discloses a number of genes associated directly or indirectly with protecting against oxidative damage which contain particular polymorphisms that have been shown in the prior art to

be associated with disorders. In particular, the specification teaches the polymorphisms of a valine amino acid substitution at position 9 of the MnSOD protein, a polymorphism which results in the presence of an isoleucine at amino acid 58 of MnSOD, a polymorphism which results in a valine to glutamic acid substitution at amino acid 7 of CZSOD, a polymorphism which leads to a cysteine to phenylalanine substitution at amino acid 6 of CZSOD, and a polymorphism which leads to a cytosine to thymine substitution at nucleotide –262 of the catalase gene promoter. It is stated that polymorphisms in the MnSOD, CZSOD, CAT and GP genes are of more significance than polymorphisms in other genes and that preferably these genes are given a weighing factor that is twice that assigned to other genes (see page 15). It is also taught that the significance of a polymorphism may be influenced by its association with a disorder and that this should be taken into consideration when weighing the polymorphisms' significance. General methods are taught whereby one may calculate a susceptibility score if the number of affected individuals in a population having the polymorphism is known (pages 15-16). If the significance and correlation factors are not known, then the value of 1.00 can be assigned to any polymorphism.

Working Examples:

The specification does not exemplify methods in which the dosage of an antioxidant composition is selected based on an assessment of an individuals polymorphisms. The specification teaches polymorphisms that have been disclosed in the prior art and teaches a means for calculating the weighing factor for a MnSOD mutation based on data provided in the prior art (Kimura et al) which teaches the odds ratio of the MnSOD

mutation. However, the specification does not teach how this information is taken together with information related to mutations in the catalase gene in order to calculate the quantity of antioxidant that should be given to an individual. Thereby, while the specification and prior art set forth the general concept that mutations in genes which normally protect against oxidative stress, may cause an increase in susceptibility to oxidative damage and that anti-oxidants may counteract this effect, the specification does not exemplify how modification of the dose of an antioxidant based on the quantity of polymorphisms will effect the occurrence or outcome of a disease, or any other parameter associated with the disease.

The Predictability or Unpredictability of the Art and Degree of Experimentation:

The art of determining the dosage of a therapeutic by analyzing the presence of polymorphisms is highly unpredictable. The total number of polymorphisms in the genome of an individual and the significance of each of these polymorphisms is highly variable and unpredictable. The specification relies on the knowledge in the prior art of known mutations in genes that are associated with a disease and which the art teaches are associated with providing a protective effect by converting harmful oxygen molecules into less reactive oxygen molecules. The specification also relies on the teachings in the prior art that antioxidant compounds can be used as a means to provide a protective effect against oxidative damage. Based on this knowledge in the prior art, the specification proposes a method by which one can determine the dosage of an antioxidant by calculating the number of polymorphisms in SOD and catalase genes of an individual. However, the specification teaches only the general concept of

increasing the dosage of an antioxidant based on the number of polymorphisms. Yet, it is highly unpredictable as to what would be the effect of increasing dosages of an antioxidant on the treatment or prevention of disease relative to the number of polymorphisms. There are no teachings in the specification which show the effect of antioxidant dosage on treatment. There are also no teachings in the specification as to the effect of the number of mutations in SOD and catalase on the occurrence of disease. It is highly unpredictable as to what would constitute an appropriate "increased dosage." For particular antioxidants, such as Vitamin E, the recommended daily allowance (RDA) is well known in the art. It is unclear as to whether the RDA is to be used as the starting point for increasing the dosage, or whether some other unspecified quantity of antioxidant is to be used as the starting dosage. There are no teachings in the specification or prior art of a positive effect associated with increasing the dosage of the antioxidant above the RDA. Thereby, it is highly unpredictable as to whether increasing the dosage incrementally with each polymorphism will effect response to the antioxidant treatment.

The teachings of Forsberg (Archives Biochem Biophysics. May 2001. 389: 84-93; previously cited) support the unpredictability of establishing an association between a polymorphism and a disorder at the time the invention was made. Specifically, Forsberg (pages 90-91) states that "These are early days for using a genetic epidemiological approach to the study of oxidative stress-related disease. As has been the case for other association studies, it is expected that positive studies will be contrasted with negative results. Therefore large-scale genotyping methods and carefully selected

populations will be required to generate reliable data...Human genome and comprehensive polymorphism data will become available shortly, determination of phenotypes will proceed more slowly, but eventually a global approach where many carefully characterized genetic variants queried in disease association studies is an achievable goal."

Amount of Direction or Guidance Provided by the Specification:

The specification does not provide sufficient guidance to enable the skilled artisan to select an appropriate increased dosage of antioxidant composition based on the presence of polymorphisms in SOD and catalase genes. The specification does not teach the baseline dosage and does not teach what degree of increase in an antioxidant would be required for each polymorphism. For instance, is the dosage doubled relative to a control individual that does not have that particular polymorphism? If so, is it at all relevant that the control individual may have another polymorphism that is more tightly correlated with the disorder and has multiple polymorphisms that are absent from the test individual? While the specification teaches that weighing factors may be assigned to the polymorphisms, how are these weighing factors taken together to determine the appropriate increase in dosage? The claims do not include any of this information and these teachings are not provided in the specification. Rather, the claims generically state that for each occurrence of any polymorphism in a SOD or catalase gene, the dosage of the antioxidant should be increased. Yet, in circumstances in which the polymorphism is not tightly linked to the disease and/or does not directly or indirectly affect oxidation, it is unclear as to how increasing the dosage will effect the outcome of

treatment. Many polymorphisms may be "associated" with an increased risk of susceptibility to a disease, but do not necessarily have an effect on an individual's phenotype. The specification does not provide sufficient guidance as to how to select which of the multitude of possible polymorphisms in the SOD and CAT genes could be detected, added up and used to determine the quantity of the increase in dosage of an antioxidant that should be administered to a patient.

There are no teachings in the specification regarding the effect of increasing the dosage of an antioxidant based on the total number of polymorphisms present in an individual's SOD and catalase genes on treatment outcome or prevention of a disease. The concepts that mutations in antioxidant enzymes increase susceptibility to disease and that a diet rich in antioxidants decreases susceptibility to disease were known in the art at the time the invention was made. For instance, with respect to breast cancer, Ambrosone (Cancer Research. 1999. 59: 602-606; see abstract) states that "The finding that risk was greatest among women who consumed lower amounts of dietary antioxidants and was minimal among high consumers indicates that a diet rich in sources of antioxidants may minimize the deleterious effects of the MnSOD polymorphism, thereby supporting public health recommendations for the consumption of diets rich in fruits and vegetables as a preventative measure against cancer." However, the present invention is not limited to methods of determining whether to administer an antioxidant to a patient based on the presence of a mutation in a SOD or CAT gene. Rather, the claims require determining an appropriate increase in dosage of an antioxidant, wherein the dosage is increased based on each occurrence of any

disorder associated polymorphism in a SOD or CAT gene. The specification does not provide sufficient guidance for selecting such an increase in dosage and has not established that increasing the dosage for each polymorphism detected results in a beneficial effect on treatment or occurrence of disease.

Conclusions:

Case law has established that '(t)o be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" *In re Wright* 990 F.2d 1557, 1561. *In re Fisher,* 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970) it was determined that '(t)he scope of the claims must bear a reasonable correlation to the scope of enablement provided by the specification to persons of ordinary skill in the art". The amount of guidance needed to enable the invention is related to the amount of knowledge in the art as well as the predictability in the art. Furthermore, the Court in *Genetech Inc. v Novo Nordisk* 42 USPQ2d 1001 held that '(I)t is the specification, not the knowledge of one skilled in the art that must supply the novel aspects of the invention in order to constitute adequate enablement". In the instant case, the novel aspects of the invention are not adequately disclosed because the specification does not teach how one can use the information regarding the number of SOD and catalase polymorphisms to determine the appropriate increase in antioxidant treatment. The specification does not provide sufficient guidance as to how to interpret the information regarding the number and identity of polymorphisms to determine an appropriate dosage. Further, the specification does not teach an association between an increase antioxidant dosage and

effectiveness of treating or preventing disease or a general association between the total number of polymorphisms and oxidative damage. Accordingly, although the level of skill in the art of molecular biology is high, given the lack of disclosure in the specification and in the prior art and the unpredictability of the art, it would require undue experimentation for one of skill in the art to make and use the invention as claimed.

RESPONSE TO ARGUMENTS:

In the response, Applicants traversed the previous grounds of rejection by stating that it was not necessary to provide a mathematical formula for calculating the dosage of an antioxidant. Applicants argued that simply by knowing that there are a greater number of polymorphisms, one would know that the dosage of antioxidant should be increased incrementally. Further, Applicants argue that specification provides the necessary teaches to enable the artisan to determine what type of dosage would be required for any given antioxidant.

Applicants arguments have been fully considered but are not persuasive. The determination of a dosage is in fact the key element to the invention as claimed and thereby guidance for selecting such a dosage must be provided by the specification. It is acknowledged that the prior art teaches the general concept that the presence of a mutation in antioxidant enzymes can be correlated with risk of disease, and that the risk of oxidative stress-related diseases can be diminished by consuming a diet rich in antioxidants. However, the present invention does not merely require administering a dosage of an antioxidant to a patient having a mutation (as is taught in the prior art).

Rather, the present invention requires determining an appropriate increase in dosage of an antioxidant based on the number of disorder associated polymorphisms found in the SOD or CAT genes. Thereby, it is necessary for the specification to teach the skilled artisan how to select the appropriate dosage of a particular antioxidant based on the number of polymorphisms in a particular SOD or CAT gene. Yet, the specification provides only a general hypothesis that increasing the dosage of an antioxidant relative to the number of any "disorder-associated" polymorphism will have a beneficial effect on treatment. There is no data provided in the specification to substantiate this hypothesis. As discussed above, each polymorphism will have a variable effect on the occurrence or susceptibility to disease – the claims as written do not take this factor into consideration. Secondly, the claims require an incremental increase in the dosage based on the number of polymorphisms. There is no guidance provided as to how one would determine what would constitute an appropriate increase. Is this determined based on the potential number of polymorphisms that might be present in any given gene? Or are all genes and polymorphisms considered to be equivalents? For instance, a single polymorphism "X" in the SOD1 gene may destroy all activity of the encoded protein. But, would one nevertheless give an individual having polymorphism "X" and a second polymorphism, double or .2X or 10X the antioxidant dosage (based on whatever constitutes an increased dosage)? The specification leaves the task of determining the starting dosage and the "increased" dosage to the artisan. There is no guidance provided in the specification for selecting an appropriate starting or increased dosage for any particular antioxidant. Most importantly, the specification has not established

that increasing the dosage relative to the number of polymorphisms will have a positive effect on susceptibility to a disorder or on any other parameter associated with a disorder. The prior art teaches RDAs for particular antioxidants and teaches the toxicity levels for many antioxidants. However, the specification does not teach how this information is taken into consideration when selecting the appropriate level of increased dose that should be administered for each additional occurrence of a polymorphism. For these reasons, it is maintained that the specification does not provide sufficient guidance to enable the skilled artisan to select a dose of an antioxidant based on the occurrence of each polymorphism in a SOD or CAT gene.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite over the recitation of "increased dose." The term "increased" in claim 1 is a relative term which renders the claim indefinite. The term "increased" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In particular, the claim does not state what the dosage is increased relative to – e.g., relative to zero, relative to a unspecified control level given to the general population, relative to a dosage given to patients who have a particular disorder, or relative to patients that do not have any polymorphisms, etc.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carla Myers whose telephone number is (571) 272-0747. The examiner can normally be reached on Monday-Thursday from 6:30 AM-5:00 PM. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (571)-272-0745.

The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866)-217-9197 (toll-free).

Carla Myers
May 31, 2005

CARLA J. MYERS
PRIMARY EXAMINER